

A STUDY TO STRATIFY THE RISK FOR DIABETIC FOOT ULCER AMONG PATIENTS WITH DIABETES MELLITUS ATTENDING DIABETIC CLINIC IN SELECTED HOSPITALS, PUDUCHERRY.

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ABSTRACT

A Descriptive cross sectional study was conducted to stratify the risk for diabetic foot ulcer among patients with diabetes mellitus attending diabetic clinic in selected hospitals, Puducherry. The study was restricted to 125 diabetic mellitus patients, selected by convenient sampling technique. The investigator used a standardized risk stratification tool (Scottish Inter Collegiate Guidelines Network) to find out the level of risk for diabetic foot ulcer. The tool was available as open access through internet. Among the 125 type 2 diabetic patients; majority 52 (41.6%) patients were in the low-risk group for foot ulcer, 48 (38.4%) patients were in the moderate risk group and 25 (20%) were in the high risk group for foot ulcer. Age of the diabetic patients was significantly associated with the level of risk for foot ulcer.

Keywords: Diabetic Mellitus, Diabetic foot ulcer

1. Introduction

India is named as the diabetes capital of the world with over **30 million people** affected by this disease. The reasons for this prevalence include urbanization and industrialization. Currently there are **62 million diabetic patients in India**. In Puducherry 8.47% of the population were affected with diabetes mellitus in the 2014. Diabetic foot ulcer is multifactorial in origin and it is a major aetiology behind lower limb amputations. It is estimated that about 85% of non-traumatic amputations among diabetic patients are due to foot ulcers. Diabetic foot ulcers will lead to infections and these accounts for nearly 10% of hospital admissions. Majority of the hospitalized patients not receive adequate foot examinations. It has become an emergency need to detect at risk cases of foot ulcers. Several clinical features have been shown to predict foot ulceration. Screening patients for those clinical features will be helpful in identifying at risk cases and appropriate intervention can be taken timely. A Descriptive cross sectional study was conducted with the objectives: (i) To stratify the level of risk for diabetic foot ulcer among patients with type 2 diabetes mellitus and (ii) To associate the selected demographic and clinical factors with the level of risk for diabetic foot ulcer among patients with type 2 diabetes mellitus.

2. Methodology & Materials used

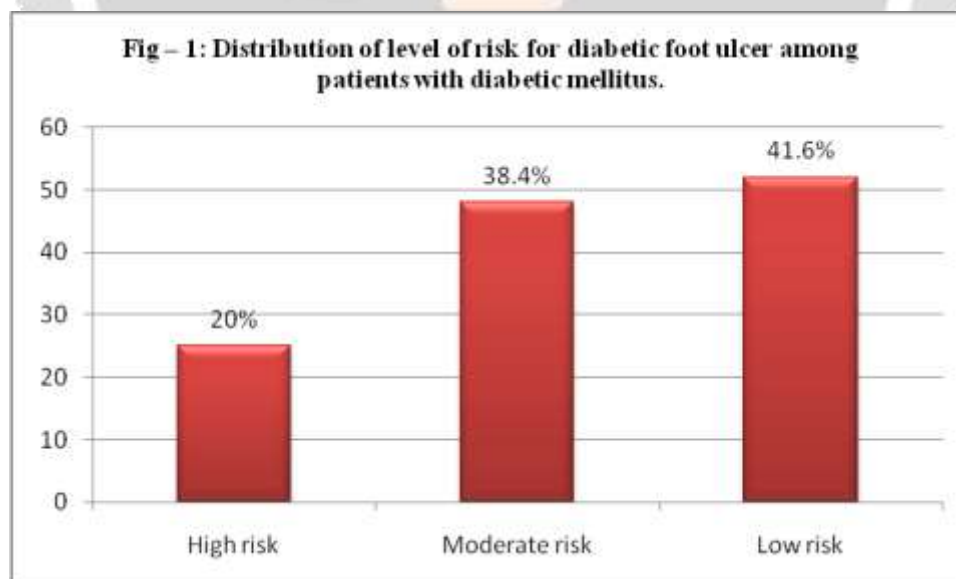
Quantitative Research Approach was used with Descriptive cross sectional Research Design. The study was restricted to 125 type 2 diabetic mellitus patients attended diabetic clinic in selected hospitals, Puducherry, were selected by convenient sampling technique. **Inclusion criteria** includes; Patients with type 2 Diabetes Mellitus who are able to understand English and Tamil and who are available at the time of data collection. **Exclusion criteria** includes; Patients with type 1 Diabetes Mellitus and Patients having diabetic foot ulcer at the time of study.

The tool for data collection has been classified into two parts. **Part-I** deals with Socio demographic variables & clinical parameters of diabetic patients and **Part-II** consist of a standardized risk stratification tool (Scottish Inter Collegiate Guidelines Network) to find out the level of risk for diabetic foot ulcers. Formal written permission was obtained from the head of selected hospitals, Puducherry. The researcher clearly explained about the research and informed consent was obtained from concerned patients with assurance of confidentiality before data collection. By convenient sampling technique, 125 type 2 diabetic mellitus patients were selected. The data regarding socio demographic and clinical parameters were collected using background proforma. The level of risk for diabetic foot ulcers was indentified with the standardized risk stratification tool.

3. Data analysis and interpretation

1. Distribution of level of risk for diabetic foot ulcer among patients with diabetic mellitus.

Level of risk	Frequency (N)	Percentage (%)
High risk	25	20
Moderate risk	48	38.4
Low risk	52	41.6



- **Table 1** Illustrates that among 125 diabetic patients, 25 (20%) were in high risk, 48 (38.3%) were in moderate risk and 52 (41.6%) were in low risk for diabetic foot ulcers.

2. Association between selected Socio demographic variables with Level of risk for diabetic foot ulcers

Table – 2: Association between selected Socio demographic variables with Level of risk for diabetic foot ulcers

Variables	Categories	Frequency (N)	Percentage (%)	P Value
Age	<30 years	1.5	0.6	S*(6.85) P=0.001*
	31-50 years	31	12.4	
	>50 years	92.5	37	
Gender	Male	50	20	NS
	Female	75	30	
Education	No formal education	35.5	14.2	NS
	Primary education	11.5	4.6	
	Secondary education	68.5	27.4	
	Higher secondary & above	9.5	3.8	
Occupation	Employed	46	18.4	NS
	Unemployed	79	31.6	
Marital status	Married	122.5	49	NS
	Unmarried	2.5	1	
Residence	Rural	82.5	33	NS
	Urban	42.5	17	
Income	<2000	112.5	45	NS
	>2000	12.5	5	
Foot care information received	Yes	34.5	13.8	NS
	No	90.5	36.2	

Table 2: Illustrates that only Patient's age was significantly associated with the level of risk for foot ulcer at $P < 0.05$ level.

3. Association between selected Clinical parameters with Level of risk for diabetic foot ulcers

Table – 3: Association between selected Clinical parameters with Level of risk for diabetic foot ulcers

Variables	Categories	Frequency (N)	Percentage (%)	P Value
Duration of diabetes mellitus	<5 years	34	13.6	NS
	5-10 years	43	17.2	
	10-15 years	27	10.8	
	15-20 years	18.5	7.4	
	>20 years	2.5	1	
Type of treatment	Insulin	21	8.4	NS
	OHA	52	20.8	
	Insulin and OHA	52	20.6	
Habit of smoking	Yes	10	4	NS
	No	115	46	
Family history	Yes	56	22.4	NS
	No	69	27.6	
Retinopathy	Yes	32	12.8	NS
	No	93	37.2	
Nephropathy	Yes	12.5	5	NS
	No	112.5	45	
CAD	Yes	28	11.2	NS

	No	97	38.8	
Stroke	Yes	3.5	1.4	NS
	No	121.5	48.6	
Hypertension	Yes	69.5	27.8	NS
	No	55.5	22.2	
Thyroid problems	Yes	1.5	0.6	NS
	No	123.5	49.4	
Compliance	No	45.5	18.2	NS
	No	79.5	31.8	
HbA1c	<7%	42.5	17	NS
	7.1-7.9%	23	9.2	
	>8%	59.5	23.8	
Blood sugar	<150mg/dl	24	9.6	NS
	151-300mg/dl	92	36.8	
	>300mg,dl	9	3.6	

Table 3 Illustrates that there is no association between selected clinical parameters with the level of risk for diabetic foot ulcers.

4. Conclusion

This study revealed that among 125 diabetic patients, 25 (20%) were in high risk, 48 (38.3%) were in moderate risk and 52 (41.6%) were in low risk for diabetic foot ulcers. Patient's age was significantly associated with the level of risk for foot ulcer. The finding of the study shows the importance of screening programmes in indentifying the high-risk cases of foot ulcers. Screening the diabetic patients for foot ulcers and intervening at the proper time can prevent the occurrence of future complications.

Nurses working in endocrinology, as well as medical wards, are coming across a large group of diabetic patients daily. As educated personals nurses can play an extreme role in screening programmes for foot ulcers. They can participate in diabetic foot lab services and can help the clinicians in indentifying high-risk cases for foot ulcers. The nurses can perform demonstrations of the foot care practices. They can focus on the problems with foot wears, absent foot sensations, etc. moreover, they can assist the patients in treatment regimen also. The nurse educators should indicate the nursing students with theoretical content and should provide adequate clinical exposure for the treatment of patients with diabetes mellitus. Clinical postings can be given in diabetic foot labs, diabetic clinics etc. so that the students will get adequate knowledge about screening measures of foot ulcers, treatment regimen, insulin therapy, etc. the students can be trained for giving health education to the patients.

The findings of the present study can help the administrative authority in taking necessary measures for the prevention of foot ulcers. Resources can be mobilized to the low-income group so that the standard of care will improve. Budget can be distributed for the development of services provided by the diabetic clinics. The administrators can allot special health educators also. More researches should be undertaken by the nurses to indentify the vulnerable groups for foot ulcers and other complications of diabetic mellitus. A similar descriptive study can be done with a large sample size, including more clinical and demographic variables and an experimental study can be done to find out the effect of education on prevention of foot ulcers.

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